

1 gallon of water and filtering it. One ounce of this solution is then added to 3 gallons of cold water. This mixture should be made fresh daily.

L. H. BURGWARD.

DAIRYMAN'S Slogan Through selection, feeding, and breeding, every dairyman should do his best to put his herd on a high production basis. His slogan should be "Not more but better dairy cows." (Fig. 68.)

A tabulation of more than 100,000 yearly individual records from cows on test in dairy-herd-improvement associations has shown a rapid and almost constant gain in income over cost of feed as production advanced from the lowest-producing groups to the highest ones. The cows that produced 100 pounds of butterfat a year brought in an average income of \$14 over cost of feed. Those that produced 200 pounds of butterfat a year brought in an income of \$54 over cost of feed. At 300 pounds of butterfat a year per cow this income was \$96, at 400 pounds it was \$138, and at 500 pounds it was \$178. Thus, for every 100 pounds gain in butterfat there was a gain of about \$40 in income over cost of feed. These figures are based on farm prices from all parts of the country, including the whole-milk districts.

A further analysis of these figures shows that one cow producing 500 pounds of butterfat a year brought in almost thirteen times as much income over cost of feed as the cow that produced 100 pounds. In other words, the dairyman with a herd of 10 cows, each producing 500 pounds of butterfat, would receive as much income over cost of feed as the dairyman with a herd of 130 cows each producing 100 pounds of butterfat a year.

There is an old saying that "you may as well sit idle as work idle." Certainly the dairyman who tries to earn a living by feeding and milking low-producing dairy cows is not sitting idle, but if the average production per cow is only about 100 pounds of butterfat a year that dairyman may truly be classed among those who spend their years in idle work.

Good Headwork Required

To build up a small herd of cows having an average butterfat production of 400 to 500 pounds per cow requires good headwork. To get the same profits from a herd having an average butterfat production of 100 to 200 pounds per cow requires much handwork. If a dairyman does good headwork, he can make life very much easier for his hands.

When the population of this country increases to 200,000,000, it should be easily possible for the additional supply of dairy products needed to be produced not by more but by better dairy cows. At the present time there are nearly 22,000,000 dairy cows in this country. The average milk production of these cows is about 4,500 pounds a year. If this were increased at the rate of 100 pounds a year, in 45 years the average milk production per cow would be doubled. The present number of cows could then supply sufficient dairy products at the present rate of consumption for considerably more than 200,000,000 people. That such a gain in average production per cow

is well within the range of possibility is proved by the fact that many dairy herds are now above that average. What is being done in the way of increased production in many herds may eventually be accomplished in many more.

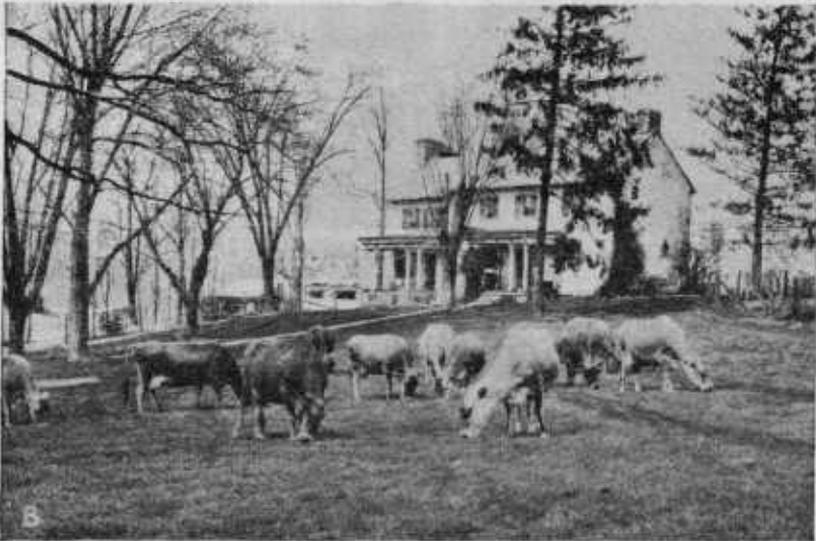


FIG. 68.—How selection and breeding improved one dairy herd. A, not more, but, B, better cows

More feed per cow will be required for the high-producing dairy cows, but dairy-herd-improvement association records also show that increased production per cow does not require a corresponding increase in quantity of feed or in cost of feed. The records show that

average milk production may be doubled with a feed increase of approximately 40 per cent. Therefore, labor and feed can be saved and milk production can be doubled if not more but better dairy cows are kept.

J. C. McDowell.

Dairyman's Utensils Can Be Sterilized by Steam Economically

Milk and its products in the United States are steadily improving in quality because more careful methods are being used in their production.

Dairymen realize that it pays to produce good milk, and as a rule are desirous of improving their methods. They have learned through experience and from scientific investigations that bacteria have a



FIG. 69.—Milk utensils in a sterilizing cabinet ready to be steamed

detrimental effect on milk and that unsterile utensils contribute more than any other source to bacterial contamination of milk. For these reasons milk utensils are usually treated in some manner to destroy the bacteria remaining on them after they are washed and rinsed. To accomplish this, moist heat in the form of boiling water or steam is the agent most generally employed.

Milk utensils which have been washed can be practically sterilized by rinsing them thoroughly with boiling water or by immersing them in it. If there are many utensils, however, this method is laborious and uneconomical. Heat, in most cases, can be applied to the utensils more easily, effectively, and economically in the form of steam, which is usually either introduced into the utensils individually by means of a jet or is confined in a tight cabinet in which the utensils are placed. (Fig. 69.)

Utensils may be satisfactorily steamed over a jet if enough time is allowed, and in certain cases it is necessary to use this method. However, it is more laborious, more wasteful of steam, and not so dependable as cabinet sterilization.

Steam cabinets are of two general types—one which is operated with steam from a boiler or some other apparatus and another which produces its own steam by means of heat applied underneath. The latter type is constructed of metal, whereas the former may be made of concrete, wood, galvanized iron, hollow tile, or other material.